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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,891	06/09/2005	Bud G. Harmon	32-02 US	6483
23713 7.	590 11/14/2006		EXAMINER	
GREENLEE WINNER AND SULLIVAN P C			SAYALA, CHHAYA D	
4875 PEARL E SUITE 200	EAST CIRCLE		ART UNIT	PAPER NUMBER
BOULDER, C	O 80301		1761	

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)	
	10/511,891	HARMON ET AL.	
Office Action Summary	Examiner	Art Unit	
	C. SAYALA	1761	
The MAILING DATE of this communication ap Period for Reply	pears on the cover sheet	with the correspondence address	
A SHORTENED STATUTORY PERIOD FOR REPL WHICHEVER IS LONGER, FROM THE MAILING Description of time may be available under the provisions of 37 CFR 1. after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period Failure to reply within the set or extended period for reply will, by statuth Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	DATE OF THIS COMMUN 136(a). In no event, however, may will apply and will expire SIX (6) Me, cause the application to become	NICATION. a reply be timely filed ONTHS from the mailing date of this communicati ABANDONED (35 U.S.C. § 133).	
Status		•	
1)⊠ Responsive to communication(s) filed on <u>28 A</u> 2a)⊠ This action is FINAL . 2b)□ This 3)□ Since this application is in condition for allowa	s action is non-final.	atters, prosecution as to the merits	is
closed in accordance with the practice under		-	
Disposition of Claims		,	
4) Claim(s) 1-10 is/are pending in the application 4a) Of the above claim(s) is/are withdra 5) Claim(s) is/are allowed. 6) Claim(s) 1-10 is/are rejected. 7) Claim(s) is/are objected to. 8) Claim(s) are subject to restriction and/o	awn from consideration.		
Application Papers			đ
9) The specification is objected to by the Examine	er.		
10)☐ The drawing(s) filed on is/are: a)☐ acc		o by the Examiner.	
Applicant may not request that any objection to the	drawing(s) be held in abey	ance. See 37 CFR 1.85(a).	
Replacement drawing sheet(s) including the correct 11) The oath or declaration is objected to by the Ex			(d).
Priority under 35 U.S.C. § 119			
12) Acknowledgment is made of a claim for foreign a) All b) Some * c) None of: 1. Certified copies of the priority document 2. Certified copies of the priority document 3. Copies of the certified copies of the priority application from the International Burea * See the attached detailed Office action for a list	ts have been received. ts have been received in ority documents have bee u (PCT Rule 17.2(a)).	Application No In received in this National Stage	
Attachment(s)	_		
1)	Paper No	Summary (PTO-413) b(s)/Mail Date Informal Patent Application 	

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DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harmon et al. (US Patent 6235339) in view of Roets (US Patent 4559146) and the admitted prior art in the specification at page 5, lines 6-10, and further in view of Kaczmarek et al. (US Patent 4983297), Fullerton et al. (US Patent 4085041) and Othmer (US Patent 3772187).

Harmon et al. teach that using magnesium chloride instead of the prior art usage of iron chloride is beneficial. (See col. 4, lines 28-41). Harmon et al. teach treating organic waste streams containing animal fat, blood, tissue, etc. The amount of magnesium chloride: 0.5-5.0% by vol. The patent does not teach aeration. It does teach the magnesium chloride-dissolved air flotation process and the removal of the flocculated material. See col. 3, lines 60-67. The patent also teaches reducing the BOD to less than about 750 ppm. See claim 5.

Roets teaches chemically treating proteinaceous waste water, and then aeration of the waste water. Foam formed is removed during the aeration. See the claims that describe the steps. In this regard, Fullerton et al. teach at col. 2, lines 1-10, that oxygen

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aeration produces foam that is typically undesirable, which rises to the top and is removed.

The specification discloses that the aeration is performed as is known in the art. The prior art listed therein is said to accomplish the aeration. Othmer teaches coagulating and flocculating waste first before aeration, and then using a Venturi system for the aeration (col. 2, line 4, col. 4, lines 48-50) to reduce BOD (line 56). As for the time for aeration, lines 15-25 (col. 4) teaches some of the parameters determine this. However, aeration time will depend on the degree of reduction of BOD required in the effluent and the nature of the BOD. See also col. 10, lines 42-44. Kaczmarek et al., drawn to waste water, is used here only to show that aerobic waste treatment also is used because the method decreases BOD. See col. 4, lines 46-49.

It would have been obvious to combine the chemical treatment of proteinaceous wastes of Harmon et al. with an aeration step as shown by Roets, which is also drawn to the same endeavor, and uses iron chloride instead of magnesium chloride, which is followed thereafter by aeration. Since Kaczmarek et al. teach that aeration also reduces BOD in waste treatment, then such disclosure provides the motivation to combine. Harmon et al's magnesium chloride treatment to reduce BOD with aeration to reduce BOD, in the same manner as Roet, i.e. chemical treatment followed by aeration. It would also have been obvious to remove any foam formation for the reasons shown by Fullerton et al. and Roets. To use any aeration system, including the Venturi system as shown by Othmer would have been obvious, since no unobviousness in this regard has been established herein.

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Response to Arguments

Applicant's arguments filed 8/28/06 have been fully considered but they are not persuasive.

Applicant has argued that aerating the waste stream for a time of about one to seven days provides a BOD level that is reduced more when MgCl₂ is used.

A review of the references applied show the following

- Roets teaches clarifying proteinaceous waste water with chemical treatment (FeCl₃) and aeration.
- ❖ Harmon et al. teaches the benefits of using MgCl₂ instead of FeCl₃ and the benefits of substituting one for the other in the reduction of BOD.
- ❖ Therefore, to replace FeCl₃ with MgCl₂ would have been prima facie obvious in Roets.
- Kaczmarek et al. is drawn to waste water treating with aeration and teaches reduction of BOD with this method. One embodiment shows aeration for a day.
- Othmer teaches an aeration time from 30 minutes to several hours.
- Othmer teaches that the aeration time depends on whether coagulating and deflocculating agents were used.
- The specification discloses that "The time of aeration depends on the beginning BOD and COD levels of the effluent to be treated and the desired finals levels. This can be determined without undue experimentation." (Page 5, specification).

❖ Thus aeration time depends on the nature of the BOD, the BOD levels in the effluent to start with and the final levels desired, and whether coagulating and deflocculating agents were used. And all of these factors can be used to determine aeration time, without undue experimentation.

Therefore, when Harmon et al. is combined with references that teach chemical treatment with iron chloride and aeration, and the iron chloride is substitute with magnesium chloride, and the aeration time calculated based on all the factors above, without undue experimentation, then the aeration time would be obvious. Also, it is well settled that a patent cannot be properly granted for [an invention] which would flow naturally from the teaching of the prior art. American Infra-Red Radiant Co. v Lambert Indus., Inc., 360 F.2d 977, 986 [149 USPQ 722 (CCPA 1958)], (8th Cir.) (quoting Application of Libby, 255 F.2d 412 [118 USPQ 194 (CCPA 1958)], CERT. DENIED, 385 U.S. 920 [151 USPQ 757](1966).

As for applicant's characterization of Kaczamarek et al. being drawn to waste water effluents from crude oil production wells, the treatment is still related to waste water effluents and is relevant prior art and moreover, the claim includes waste water from chemical plants, which this is. Applicant states that the reference aeration includes microorganisms, but waste water from fermentation plants, which the claim includes, would also include microbes. When one skilled in the art is looking to clarify waste water effluents, all prior art that relates to decreasing BOD is analogous art. In fact, patentees state at col. 4, lines 47-49: "Any conventional aerobic waste water treatment method for decreasing the Biological Oxygen Demand (B.O.D.) level may be used."

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Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. SAYALA whose telephone number is 571-272-1405.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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C. SAYALA

Primary Examiner

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Group 1700.